



# **VIRGINIA DEFENSE FORCE**

## **COMM 103C: Longwire Antenna**

---

# COM 103C Purpose

***Action: The following slides gives basic instruction in the following Skill Level 1 High Frequency Radio Team (HFRT) tasks as identified in The HFRT Training and Evaluation Outline (T&EO):***

- ***Place longwire antenna into service.***

***Conditions: You are located in the desired position and with the necessary equipment to erect the longwire antenna.***

***Standard: The team after, completing the block of instruction, will safely set up the antenna within 20 minutes.***

- **\*SILENCE CELLPHONES**
- **\*50/10 TIMEKEEPER**
- **\*SIGN IN FOR CREDIT**
- **\*TESTABLE**
- **\*SAFETY BRIEF**





# Course Objectives

**At the completion of this period of instruction, you should be familiar with the following:**

- ***Recognize components of longwire antenna***
- ***Place longwire antenna into Service***





# Safety Briefing



- 1. Never erect antennas less than 2 times its length close to energized power lines.**
- 2. Never touch or be in close proximity to antennas when transmitting or burns could result.**
- 3. Always ground equipment using proper grounding techniques.**



# General Antenna Siting Requirements



**In addition to the safety requirement of staying away from energized power lines, be cognizant of the following:**

- **Wide open areas will give better reception.**
- **Closer proximity to power lines will increase possibility of interference.**
- **Closer proximity to buildings will reduce reception.**
- **The distance your antenna can be away from the radio is determined by the length of your antenna coax and your tuner cables.**
- **Site your antenna so your radio will have shelter from elements and electrical power (if available).**



# Longwire Antennas

- **Longwire antennas may be erected in many different ways; books have been written about types of longwire antennas.**
- **You can erect them vertically, sloping down from a high point, as a “V” either with the V up or down to name a few; all have advantages and disadvantages.**
- **This task will show you how to erect a “L” antenna which is capable of the NVIS (Near Vertical Incidence Skywave) communications that the VDF requires.**
- **All VDF members are encouraged to educate themselves and to experiment with the other types of antennas.**





## **Step 1**

**Determine position of antenna siting.**



**Hammer**

**Antenna**



**Cord**

**Stakes**

## **Step 2**

**Locate the materials you will be using. Gather these in your antenna location.**





### **Step 3**



- **Unroll antenna, paying strict attention that it does not kink or knot itself.**
- **Divide the antenna into half and place the insulator at the midpoint.**
- **Tie the short cord to the tree/support.**
- **Tie the other end of the short cord to the insulator.**



## **Step 4**

**Tie one antenna end to a tree/support with the long cord. Note that this antenna does not have to be high off the ground.**







## Step 5

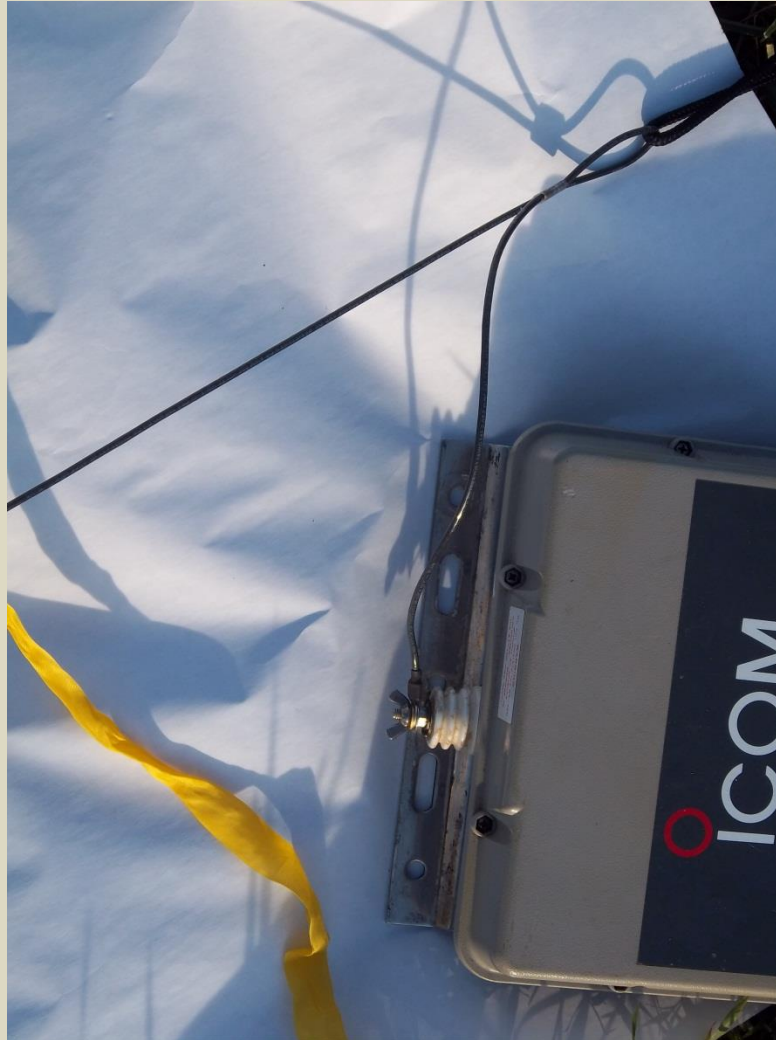


**Stretch out the remaining “L” segment, again making sure that it is at right angles to the already established leg. Secure this leg with a stake . Attach the rope to the stake.**

**Tip: you can use a grounding stake as the antenna stake if it is secure enough!**



## **Step 6**



**Connect the free end connector to the tuner high tension connector.**





**Warning  
flags**



**Warning  
flags**

**Tie caution tape to the antenna  
leads to prevent someone from  
walking into the antenna. At night  
use chem lights if you have them  
available.**





# To Secure Antenna



- 1. Remove tuner wire.**
- 2. Remove rope securing the antenna.**
- 3. Carefully roll up the antenna wire.**
- 4. Remove the stake and the mounting ropes.**
- 5. Secure all items in the transport case.**
- 6. Double check that you didn't leave anything behind.**



# Questions?